

Claims

1. A method for determining fluctuating fuel properties ( $H_u$ , ?) during the operation of a power plant,

5 characterized in that

an efficiency factor ( $\eta$ ) for the power plant is determined on the basis of current operating parameters ( $P$ ,  $m$ ,  $V$ ,  $p$ ,  $T$ ) of the power plant and a change in the fuel properties ( $H_u$ , ?) is concluded as a result of a change over time in the efficiency 10 factor ( $\eta$ ) thus determined.

2. The method as claimed in claim 1,

characterized in that

one or more elements from the group power rating ( $P$ ) of the 15 power plant, mass flow ( $m$ ) of the fuel, volume flow ( $V$ ) of the fuel, pressure ( $p$ ) of the fuel, and temperature ( $T$ ) of the fuel are determined as the current operating parameters ( $P$ ,  $m$ ,  $V$ ,  $p$ ,  $T$ ).

20 3. The method as claimed in claim 2,

characterized in that

the efficiency ( $\eta$ ) is determined by direct recording of the mass flow ( $m$ ) of the fuel.

25 4. The method as claimed in claim 2,

characterized in that

the efficiency is determined by recording the volume flow ( $V$ ), the pressure ( $p$ ) and the temperature ( $T$ ) of the fuel, in particular while leaving out of consideration the real gas

30 factor ( $z$ ).

5. The method as claimed in claim 2,

characterized in that

the efficiency is determined by measuring differential pressure ( $\Delta p$ ), pressure (p) and temperature (T) of the fuel, in particular while ignoring the real gas factor (z).

- 5 6. The method as claimed in one of the claims 1 to 5,  
characterized in that  
a change in the mass-related heating value ( $H_{u_m}$ ) of the fuel is  
concluded as the change in the fuel property ( $H_u$ , ?).
- 10 7. The method as claimed in one of the claims 1 to 6,  
characterized in that  
a change in the volume-related heating value ( $H_{u_v}$ ) of the fuel  
is concluded as the change in the fuel property ( $H_u$ , ?).
- 15 8. The method as claimed in one of the claims 1 to 7,  
characterized in that  
a change in the Wobbe index ( ) is concluded as the  
change in the fuel property ( $H_u$ , ?).
- 20 9. The method as claimed in one of the claims 1 to 8,  
characterized in that the change over time in the efficiency  
factor ( $\eta$ ) relative to a reference operating state (0) is  
determined, in addition to which the heating value ( $H_{u_0}$ ) and/or  
the standard density ( $\rho_0$ ) of the fuel are determined as  
25 reference variables, the reference variables ( $H_{u_0}$ ;  $\rho_0$ ) being  
determined in particular by means of a rolling averaging during  
the operation of the power plant.
- 30 10. The method as claimed in one of the claims 1 to 9,  
characterized in that  
the change in the fuel properties ( $H_u$ , ?) is quantified using  
mathematical methods.